

The SPHERE STUDY – Follow Up

Secondary Prevention Of Heart Disease in General Practice

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the SPHERE study

Secondary Prevention of Heart Disease in General Practice

A research study funded by the Health Research Board and the Irish Heart Foundation



Overview of original SPHERE study



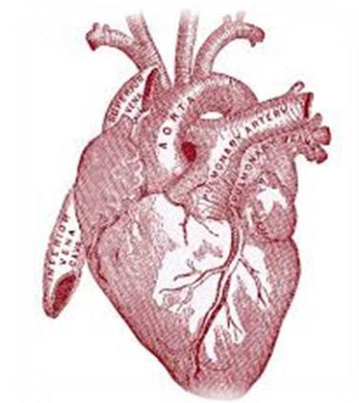
- The SPHERE Study was the largest ever non-pharmaceutical trial in general practice on the island of Ireland. The study began in 2003 and ended in 2007.

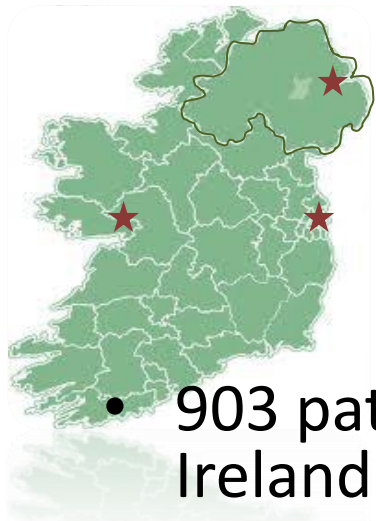
Aims:

- To design, implement and test an intervention to improve the process of care and clinical outcomes for patients with established coronary heart disease (CHD).
- To reduce rates of illness and premature death for patients with CHD and to improve the care they receive in general practice.

SPHERE Study Rationale

- People with CHD had been highlighted both nationally and internationally as a priority group for prevention efforts
- General Practice is the ideal setting for targeting these patients
- Previous research showed there was considerable room for improvement



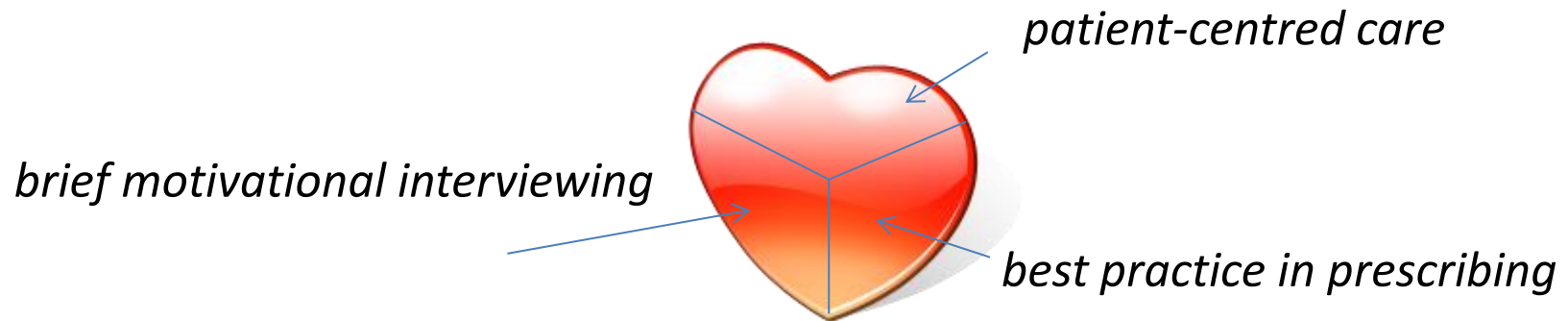


SPHERE STUDY SUMMARY

- 903 patients with heart disease (315 in Northern Ireland)
- 48 [general practices](#) in the East, North and West of Ireland (16 per region)★
- 24 practices were randomly allocated to receive the intervention for 18 months; 24 continued to provide usual care
- Patient risk factor and health status data were collected at baseline and 18 months
 - Questionnaires
 - Medical records

SPHERE Study Intervention

- Designed in consultation with patients and practitioners:



- Practitioners attended two 90-minute training sessions:
 - *Facilitating lifestyle behaviour change*
 - *Optimal medication prescribing for secondary prevention*
- Patients visited the practice for review every 4 months.
 - *Tailored patient care: SPHERE booklet – personal action plan*
 - *Targets and goals for optimal secondary prevention reviewed*

SPHERE Study



➤ Fewer patients were admitted to hospital over the 18 months in the intervention group : 26% v 34%

➤ After 18 months there were no significant differences in risk factor control:

- Systolic BP >140 mmHg: intervention 27%; control 33%
- Diastolic BP >90 mmHg: intervention 9%; control 10%
- Total cholesterol >5mmol/l: intervention 15%; control 16%

➤ No other clinical benefits shown - possible 'ceiling effect' related to improved management of CHD

Murphy, Cupples, Smith et al. BMJ 2009;339:b4220

Follow-up to the SPHERE study



***A six-year follow-up to the
SPHERE study commenced in
January 2012***

The aim -

to trace the 903 original participants and explore if the positive changes in admissions are still happening, in the longer term, after six years.



Method

- Contacted practices
- Employed face to face visits & telephone calls
- All practices agreed to take part

- Practices were facilitated to trace original patients
- Research nurses worked with practitioners
- Patients were posted study information, and form to indicate consent

Post Consent

Patients

- ✓ Short postal questionnaire

Research Nurses

- ✓ Data collection from records
- ✓ Questionnaire & patient record data entered into SPSS



Tracing patients

- In NI 16 patients had left the practice
- With ethics committee approval, contact was made with BSO (Business Service Organisation)

Two categories:

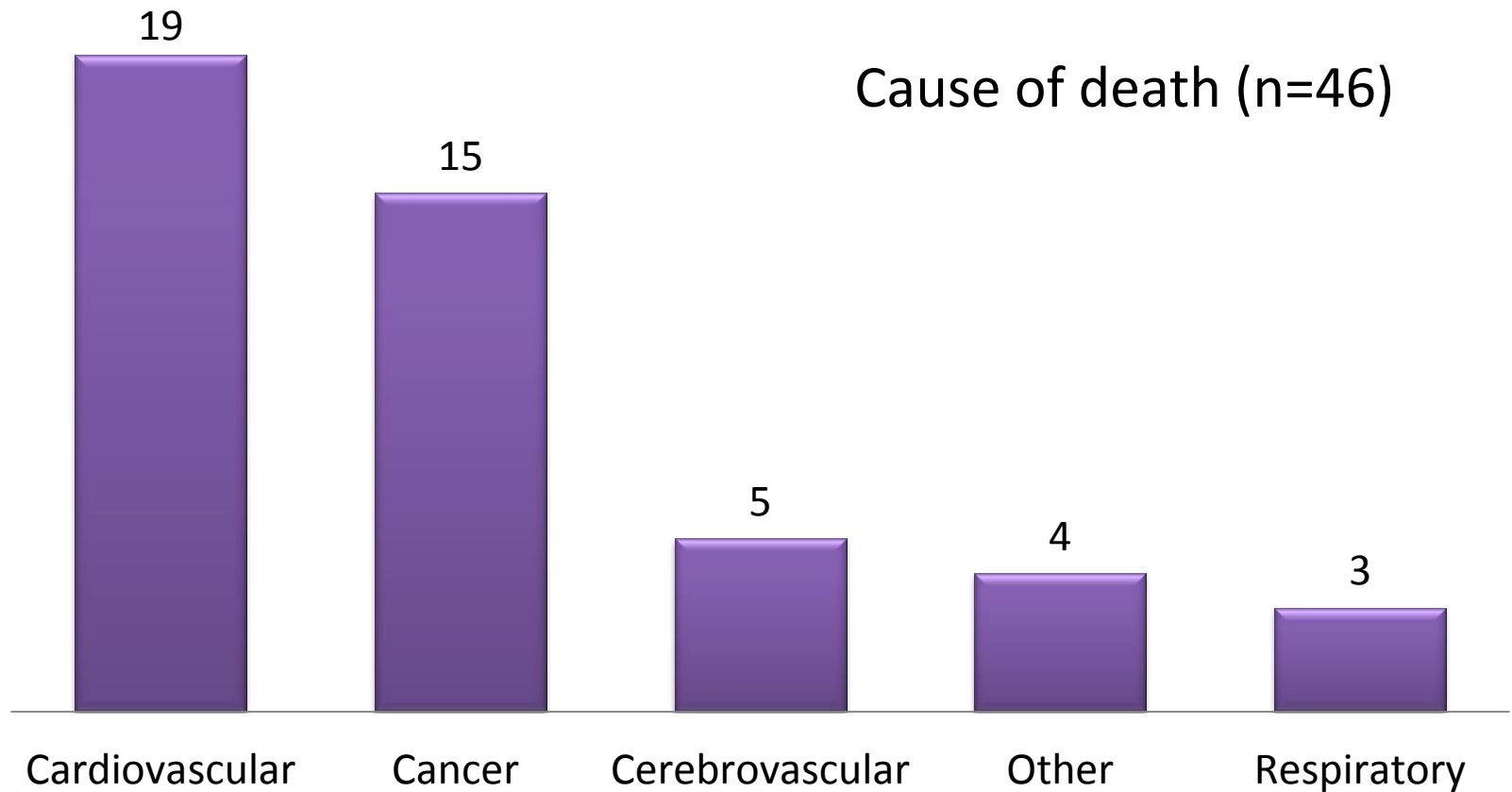
- Patients who had moved and were deceased - BSO provided cause of death
- Patients who had moved and were alive - BSO posted study info and invitation to join the follow up study

Contacting patients who had left the practice

Example

| No | ID | Info from practices | BSO | Outcome |
|----|------|---------------------------|-------------------|---------------------------------|
| 1 | 3403 | left practice | Contacted via BSO | No reply |
| 2 | 3419 | left practice | Contacted via BSO | Pt consented & completed Q |
| 3 | 3423 | left practice | Contacted via BSO | No reply |
| 4 | 3436 | left practice | info via BSO | Pt died Heart Failure* |
| 5 | 3516 | left practice | Contacted via BSO | Pt consented & completed Q |
| 6 | 3521 | left practice | Contacted via BSO | No reply |
| 7 | 3706 | left practice | Contacted via BSO | No reply |
| 8 | 4019 | left practice | Contacted via BSO | Pt consented & completed Q |
| 9 | 4134 | left practice | Contacted via BSO | Pt consented & completed Q |
| 10 | 4320 | left practice | Contacted via BSO | No reply |
| 11 | 4513 | left practice | Contacted via BSO | Pt consented & completed Q |
| 12 | 4631 | left practice | info via BSO | Pt died Myocardial Infarction* |
| 13 | 4635 | left practice | Contacted via BSO | No reply |
| 14 | 4706 | left practice | Contacted via BSO | No reply |
| 15 | 4719 | Patient moved to Scotland | Unable to contact | |
| 16 | 4720 | left practice | info via BSO | Pt died Myocardial Infarction * |

Northern Ireland



Similar methods were employed in the Republic of Ireland

Of the original 903 patients 886 (98%) were traced

Patients Deceased: 138 (15.3%)

No Response: 68 (8.6%)

Declined: 31 (3.9%) [*equally divided across arms*]

Data were collected from practice medical records :

Intervention Group: 339 (76%)

Control Group: 357 (78%)

Questionnaire return rate: (92%)



RESULTS

- No significant differences between intervention and control practices in hospital admissions
- No differences in mortality
- No differences in proportions of patients above target control for blood pressure or total cholesterol.

Percentage of participants outside secondary prevention risk marker guidelines at baseline and 6 years

| | SPHERE | | SPHERE Follow UP | |
|----------------------------------|--------------|---------|------------------|---------|
| Variable | Intervention | Control | Intervention | Control |
| | | | | |
| Systolic BP >140 mm Hg | 34.1 | 33.8 | 31.5 | 24.3 |
| Diastolic BP >90 mm Hg | 13.3 | 11.4 | 3.8 | 3.3 |
| Total cholesterol >5.0 mmol/l | 21.7 | 22.0 | 13.9 | 13.6 |



Overall risk factor control was much improved from baseline in both groups

- MORTALITY
- BLOOD PRESSURE
- CHOLESTEROL

no difference

Conclusions

- Long term follow-up of interventions in primary care
 - is possible and
 - is needed to assess sustainability of effect
- Policy makers should consider
 - regular review of previously effective programmes
 - and a 'turn on, turn off' strategy of support
- Improvements are on-going, in the quality of care
provision in primary care

Thank You

- **Funder:** Health Research Board, Ireland
- **Participating practices**
- **The SPHERE patients**
- **The Research Nurses**



Healthcare systems in Northern Ireland and Republic of Ireland

Northern Ireland (Population 1.8 million)

- Publicly funded (NHS)
- No charges for access to primary care or hospital care
- People are registered for primary care in a specified general practice
- Practices receive financial incentives for using disease registers and monitoring quality of care
- Prescriptions are free

Republic of Ireland (Population 4.58 million)

- Mixed public and private funding
- Primary health care is free via the General Medical Services scheme (GMS) to those judged less able to pay or aged ≥ 70
- Registration with a practice required only if patient is in the GMS scheme
- Subsidised prescriptions are available (€2.50 per item) within GMS scheme; others pay full cost of medicines, to monthly limit (£84/€90 per family)

- It is important to interpret research in the context of current evidence

[return](#)